This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A plasma processing system, said plasma processing system comprising:

a substantially cylindrical plasma processing chamber configured for etching a **semiconductor** substrate, said substantially cylindrical plasma processing chamber including a top region located on the top surface of said substantially cylindrical plasma processing chamber and a peripheral region located on a side surface surrounding the periphery of said substantially cylindrical plasma processing chamber, said substantially cylindrical plasma processing chamber including at least an inner wall; and

a gas flow system coupled to said plasma processing chamber, said gas flow system controlling flow of a single input gas comprising a mixture of etchant source gases into at least two different regions of said plasma processing chamber, said gas flow system comprising a gas inlet for receiving said single input gas that is to be delivered into said plasma processing chamber and at least first and second gas outlets configured to deliver the same said single input gas to at least two different regions including at least one peripheral region and at least one top region of said plasma processing chamber, said peripheral region of said plasma processing chamber not including any points of said top region of said plasma processing chamber, at least a first portion of said input gas being delivered to said plasma processing chamber via said first outlet and a remaining portion of said input gas being delivered to said plasma processing chamber via said second outlet, the first portion and the remaining portion of said input gas having the same mixture of etchant source gases so that said at least two different regions receive the same mixture of etchant source gases, **the gas flow system being configured to vary the amounts of first and remaining portions in order to control the distribution of neutral gas components inside the plasma processing chamber** thereby improving process uniformity.

2. (Original) A plasma processing system as recited in claim 1, wherein the at least two different regions include a top central region and an upper peripheral region.

3. (Original) A plasma processing system as recited in claim 1, wherein the at least two different regions include a top central region and a lower peripheral region.

4. (Original) A plasma processing system as recited in claim 1, wherein the at least two different regions include a top central region, a lower peripheral region, and an upper peripheral region.

5. (Previously Presented) A plasma processing system as recited in claim 2, wherein the at least two different regions further include a lower region near the substrate.

6. (Previously Presented) A plasma processing system as recited in claim 5, wherein the plasma processing system includes a chuck and

wherein the input gas is released through the chuck in order to deliver a second portion of the input gas to the lower region.

7. (Original) A plasma processing system as recited in claim 1, wherein said flow system controls amount or volume of the input gas into the at least two different regions of said plasma processing chamber.

8. (Original) A plasma processing system as recited in claim 1, wherein said flow system controls flow rate of the input gas into the at least two different regions of said plasma processing chamber.

9. (Previously Presented) A plasma processing system as recited in claim 1, wherein the input gas includes at least first and second gases, and

wherein said flow system independently controls relative flow rate of the same input gas into the at least two different regions of said plasma processing chamber.

10. (Previously Presented) A plasma processing system as recited in claim 1,

wherein said plasma processing system further comprises a gas delivery ring that is fluidly coupled to said first outlet, and positioned on an upper portion of the plasma processing chamber, the gas delivery ring including a series of holes substantially equidistant about the periphery of the gas delivery ring, the first portion of said input gas being delivered into said peripheral region of said plasma processing chamber through said series of holes.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Previously Presented) A plasma processing system as recited in claim 1, wherein the gas flow system receives a gas flow control signal for determining the amount or volume of the input gas that is delivered into the plasma processing chamber by each one of the first and second gas outlets.

17. (Original) A plasma processing system as recited in claim 16, wherein the gas flow control signal determines the flow rate of delivery of gas by each of the first and second gas outlets into the plasma processing chamber.

18. (Cancelled)

19. (Currently Amended) A plasma etcher ~~processing system~~ for ~~processing~~ etching a substrate, comprising:

a plasma processing chamber within which a plasma is both ignited and sustained for an etching task ~~said processing~~, said plasma processing chamber having no separate plasma generation chamber, said plasma processing chamber having an upper end and a lower end, said substrate being processed in said lower end;

a gas flow system coupled to said plasma processing chamber, said gas flow system separating and directing the flow of the same single input gas, associated with forming a plasma, at the same time into at least two different regions of said plasma processing chamber, said at least two different regions including at least an upper peripheral region located at a side surface of said plasma processing chamber and at least a top central region located at a top surface of said plasma processing chamber, said upper peripheral region being located closer to said upper end of said plasma processing chamber than said lower end of said plasma processing chamber, at least a first portion of said input gas being delivered to said upper peripheral region and a remaining portion of said input gas being delivered to said top central region, the first portion and the remaining portion

having the ~~exact~~ same composition of **etchant source** gases as the same single input gas **since they are split therefrom**; and

an azimuthally symmetric gas distribution system comprising at least gas ring that supplies a portion of said single input gas to the upper peripheral region, the gas ring including a series of holes substantially equidistant about the periphery of the gas ring.

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Original) A plasma processing system as recited in claim 19, wherein said flow system controls amount or volume of the input gas into the at least two different regions of said plasma processing chamber.

24. (Original) A plasma processing system as recited in claim 19, wherein said flow system controls flow rate of the input gas into the at least two different regions of said plasma processing chamber.

25. (Previously Presented) A plasma processing system as recited in claim 19, wherein the single input gas includes at least first and second gases, and

wherein said flow system independently controls relative flow rate of the same single input gas including the first and second gases into the at least two different regions of said plasma processing chamber.

26. (Cancelled)

27. (Cancelled)

28. (Previously Presented) A plasma processing system as recited in claim 19, wherein said plasma processing chamber includes at least an inner wall, and the gas flow system comprises:

at least one gas inlet for receiving the input gas that is to be flown into said plasma processing chamber;

at least first and second gas outlets that are each capable of delivering the input gas to the plasma processing system; and

wherein a first portion of the input gas is delivered to the plasma processing chamber via said first gas outlets and wherein a remaining portion of the input gas is delivered to the plasma processing chamber via said second gas outlet.

29. (Previously Presented) A plasma processing system as recited in claim 28, wherein the azimuthally symmetric gas distribution system further includes a gas distribution plate that supplies a portion of said single input gas to the top central region, the gas distribution plate having a pattern of holes, the gas ring being fluidly coupled to the first gas outlet and the gas distribution plate being fluidly coupled to the second gas outlet and wherein a first portion of the input gas is released into the upper peripheral region through the gas ring, and wherein the remaining portion of the input gas is released into the top central region through the gas distribution plate.

30. (Original) A plasma processing system as recited in claim 28, wherein the at least a portion of the input gas is released into a second region, the first region being an upper peripheral region that surrounds the inner wall of the plasma processing chamber, and the input gas that is released into the second region is delivered by the second gas outlet.

31. (Original) A plasma processing system as recited in claim 28, wherein the at least a portion of the input gas is released into a second region, the second region being a lower peripheral region that surrounds the inner wall of the plasma processing chamber, and the input gas that is released into the second region is delivered by the second gas outlet.

32. (Original) A plasma processing system as recited in claim 28, wherein the gas flow system receives a gas flow control signal for determining the amount or volume of the input gas that is delivered into the plasma processing chamber by each one of the first and second gas outlets.

33. (Original) A plasma processing system as recited in claim 32, wherein the gas flow control signal determines the flow rate of delivery of gas by each of the first and second gas outlets into the plasma processing chamber.

34. (Cancelled)

35. (Previously Presented) A plasma processing system as recited in claim 19, wherein the at least two different regions further include a lower region near the substrate.

36. (Previously Presented) A plasma processing system as recited in claim 19, wherein the lower region is located on a chuck near the edges of the substrate, at least a first portion of said input gas being delivered to said upper peripheral region, a second portion of said input gas being delivered to said lower region through said chuck and a remaining portion of said input gas being delivered to said top central region.

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Previously Presented) A plasma processing system as recited in claim 19 wherein said input gas comprises a mixture of gases that are mixed before separating and directing the flow of the same single input gas at the same time into the at least two different regions of said plasma processing chamber.

43. (Previously Presented) A plasma processing system as recited in claim 19 wherein said top surface defines said upper end of said plasma processing chamber and wherein said peripheral region is located proximate to said upper end of said plasma process chamber.

44. (Previously Presented) A plasma processing system as recited in claim 19 further comprising:

a coupling window disposed at an upper end of said plasma processing chamber; and

an RF antenna arrangement disposed above a plane defined by said substrate when said substrate is disposed within said plasma processing chamber for said processing.

45. (Previously Presented) A plasma processing system as recited in claim 19 further comprising:

an electromagnet arrangement disposed above said plane defined by said substrate, said electromagnet arrangement being configured so as to result in a radial variation in the static magnetic field topology within said plasma processing chamber in the region proximate said RF antenna when at least one direct current is supplied to said electromagnet arrangement, said radial variation being effective to affect processing uniformity across said substrate; and

a dc power supply coupled to said electromagnet arrangement, said dc power supply having a controller to vary a magnitude of said at least one direct current, thereby changing said radial variation in said magnetic field topology within said plasma processing chamber in said region proximate said antenna to improve said processing uniformity across said substrate.

46. (Cancelled)

47. (Cancelled)

48. (Previously Presented) A plasma processing system as recited in claim 19 wherein said different regions further include a lower peripheral region located on a lower side surface of said plasma processing chamber, said lower peripheral region being located closer to said lower end of said plasma processing chamber than said upper end of said plasma processing chamber, at least a first portion of said input gas being delivered to said upper peripheral region, a second portion of said input gas being delivered to said lower peripheral region and a remaining portion of said input gas being delivered to said top central region.

49. (Cancelled).

50. (Currently Amended) A gas flow system for distributing gases within a plasma process chamber suitable for etching a **semiconductor** substrate, the gas flow system comprising:

a gas source capable of supplying an input gas associated with forming a plasma, the input gas comprising a mixture of etchant source gases;

a plurality of outputs for releasing ~~the identical~~ said input gas formed by said mixture of etchant source gases into said plasma process chamber, a first output being configured to release said ~~identical~~ input gas into a top central region of said plasma process chamber, a second output being configured to release said ~~identical~~ input gas into an upper peripheral region of said plasma process chamber; and

a gas flow controller disposed between said gas source and said plurality of outputs, said gas flow controller being configured to control the delivery of said ~~output~~ **input** gas into said plasma process chamber, said gas flow controller having an inlet arranged to receive said input gas from said gas source, and a plurality of outlets arranged to deliver the same said input gas to different locations within said plasma process chamber, a first outlet being configured to deliver said input gas to said first output, a second outlet being configured to deliver said input gas to said second output, said gas flow controller directing at the same time varying amounts of **the same** said ~~identical~~ input gas to each of said first and second outputs so as to provide better process control, a first portion of the total flow of ~~the~~ **said** input gas being delivered through the first outlet to the first output, and a remaining portion of the total flow of ~~the~~ **said** input gas being delivered through the second outlet to the second output, **the first and second portions of said input gas having the same mixture of etchant source gases as said input gas**.

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Previously Presented) A plasma processing system as recited in claim 19 wherein said peripheral region is located closer to said top surface than said substrate when said substrate is disposed inside said plasma processing chamber for processing.

55. (Cancelled)

56. (Cancelled)

57. (Previously Presented) A plasma processing system as recited in claim 2, further comprising:

an azimuthally symmetric gas distribution system comprising a gas channel housing and a gas delivery ring positioned around the periphery of the process chamber and cooperating to supply the first portion of said input gas to the upper peripheral region, the gas channel housing including a gas channel operatively coupled to the first gas outlet and extending around the periphery of the gas channel housing, the gas delivery ring including a series of holes substantially equidistant about the periphery of the gas delivery ring, the holes providing openings between the gas channel and the upper internal areas of the process chamber, the first gas outlet supplying said first portion of said input gas to the gas channel, the gas channel equally distributing the first portion of said input gas through each of the holes in the gas delivery ring, and the holes feeding the first portion of said input gas into the upper peripheral region of the process chamber.

58. (Previously Presented) A plasma processing system as recited in claim 57, wherein the azimuthally symmetric gas distribution system further includes a gas distribution plate that supplies the remaining portion of said single input gas to the top central region, the gas distribution plate having a pattern of holes, the gas distribution plate being fluidly coupled to the second gas outlet.

59. (Previously Presented) A plasma processing system as recited in claim 57, wherein gas delivery ring includes 16 holes configured an equal distance from each other.

60. (Previously Presented) A plasma processing system as recited in claim 2, further comprising:

a vacuum plate positioned above the inner wall of the plasma processing chamber, the vacuum plate cooperating with the plasma processing chamber to form a processing region above the substrate, the vacuum plate including an opening at its center, the opening in the vacuum plate being fluidly coupled to the second outlet; and

a gas delivery ring provided between the vacuum plate and an upper surface of the inner wall, the gas delivery ring having a series of holes substantially equidistant about the periphery of the gas delivery ring, the series of holes being fluidly coupled to the first outlet, and being placed near the vacuum plate, and

wherein the first portion of the input gas is supplied to the upper peripheral region of the plasma processing chamber via the holes in the gas delivery ring, and wherein the remaining

portion of the input gas is supplied to the top central region of the plasma processing chamber via the opening in the vacuum plate.

61. (Previously Presented) A plasma processing system as recited in claim 59, wherein a seal is provided between the gas delivery ring and the vacuum plate and between the upper surface of the inner walls and the gas delivery ring.

62. (Previously Presented) A plasma processing system as recited in claim 1, wherein the top region is located directly above the substrate to be processed, and the peripheral region is located along the inner walls of the plasma processing chamber near the top region.

63. (Previously Presented) A gas flow system as recited in claim 50, wherein the first output corresponds to a gas distribution plate having a pattern of holes, and wherein the second output corresponds to a gas ring having a series of holes substantially equidistant about the periphery of the gas ring, the gas distribution plate and gas ring cooperating to release the identical input gas in an azimuthally symmetric manner inside the plasma process chamber.

64. (Previously Presented) A gas flow system as recited in claim 50, wherein the first output is vacuum plate having a centrally located opening, and wherein the second output is a gas ring having a series of holes substantially equidistant about the periphery of the gas ring.

65. (Previously Presented) A gas flow system as recited in claim 64, wherein gas ring is located next to the vacuum plate.

66. (Currently Amended) A plasma processing apparatus as recited in claim 1 ~~and~~ or 2, wherein the at least first and second gas outlets are configured to distribute the same single input gas in an azimuthially symmetric manner so as to improve process uniformity.

67. (Currently Amended) A gas flow system as recited in claim 50, wherein the input gas is not mixed and split after leaving the gas flow controller.

68. (Previously Presented) A gas flow system as recited in claim 50, wherein the input gas is delivered directly from the gas flow controller to the plurality of outlets.

69. (New) A plasma etcher, comprising:

a process chamber within which an etching task is performed, the process chamber including a top wall that defines a top region of the process chamber and a side wall that defines a side region of the process chamber, the top region being disposed above a substrate to be etched, the side region being disposed to the side of substrate to be etched;

a gas flow system for delivering gas into the process chamber, the gas flow system comprising:

a single source of input gas, the input gas comprising a mixture of etchant source gases;

a gas flow controller for adjusting the amounts and splitting the input gas into at least a first portion and a remaining portion, each portion having the same mixture of etchant source gases because the gas is split; and

a plurality of gas conduits that directly couple the gas flow controller to a plurality of gas outlets located at different regions of the process chamber, a first gas conduit delivering the first portion of said input gas to a first gas outlet, a second gas conduit delivering the remaining portion of said input gas to a second gas outlet, the mixture of etchant source gases remaining the same while traveling through the first and second conduits from the gas flow controller to the first and second gas outlets such that the same mixture of etchant source gases is outputted by the first and second gas outlets into the process chamber, the first gas outlet outputting the first portion of input gas into the top region of the process chamber, the second gas outlet outputting the remaining portion of input gas into the side region of the process chamber,

wherein the gas flow controller is configured to adjust the gas flow rates of the first and remaining portions in order to control the distribution of neutral plasma components inside the process chamber thereby improving the results of the etching task that is being performed inside the process chamber.

70. (New) A plasma etcher, comprising:

a process chamber within which a plasma is generated for etching a semiconductor substrate, the process chamber including an upper region and a lower region, the plasma including both charged and neutral components;

a gas input means configured to deliver a single input gas comprising a mixture of etchant source gases to different locations of the process chamber in order to control the distribution of neutral components inside the process chamber, the gas input means adjusting the time that the neutral components spend in different zones of the process chamber by varying the

amount of input gas that is delivered to the different locations of the process chamber, the different zones of the process chamber including at least a hot zone where the input gases are excited, the different locations of the process chamber including at least the upper and lower regions of the process chamber.

71. (New) The plasma etcher as recited in claim 70 wherein the input gas delivered to the upper region spends more time inside the process chamber than the input gas delivered to the lower region.

72. (New) The plasma etcher as recited in claim 19 wherein the gas flow system is configured to vary the amounts of the first and remaining portions so as to affect the distribution of neutral gas components in different zones of the plasma processing chamber without affecting the composition of etchant source gases contained within the first and remaining portions, at least one of the zones being a hot zone where said input gas is excited inside the plasma processing chamber.

73. (New) The gas flow system as recited in claim 50 wherein the first and remaining portions are controlled so as to adjust the distribution of neutral gas components inside the plasma process chamber.

74. (New) The plasma processing system as recited in claim 1 further comprising:

an upper coil disposed above the process chamber and coupled to a radio frequency power source; and

a lower electrode disposed inside the process chamber and coupled to a radio frequency power source.

75. (New) The plasma processing system as recited in claim 1 further comprising:

a pump configured to draw process gases and gaseous products from the plasma process chamber through a duct, wherein the duct is located closer to the peripheral region than the top region such that the first portion spends more time inside the process chamber than the remaining portion, and wherein the gas flow system varies the amounts of first and remaining portions in order to adjust the time neutral gas components spend inside the plasma processing chamber.